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ABSTRACT

The fifth yearly progress report of a bilingual kindergarten and elementary program offering French-language instruction to native English-speakers is based on test results showing the progress of former program pupils in grades 1-4 during the 1983-84 school year. Progress in grades 1-4 was assessed by classroom observation and individual and group tests in English, French, social studies, and attitudes toward French. These students' results are compared with those of students in a French-language school reception kindergarten, an English-language program, and newcomers to the school in question. The comparisons show group differences in the expected direction, with former reception kindergarten students scoring higher than former bilingual kindergarten students, who in turn scored higher than newcomers and English-language program students. Sex differences in language performance found in earlier years had disappeared. Any long-term impact of the kindergarten program is suspected to be in the pupils' willingness to verbalize in French and in the perception of their own abilities with regard to other pupils rather than in academic performance. Additional opportunities for pupil contact through extracurricular activities are recommended over the addition of French-language courses. (MSE)

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INTRODUCTION

This is the fifth in a series of annual reports[1,2,3,4] submitted to the St. Croix School Commission. This report is based on the result of testing during the 1983-1984 scholastic year. A final report[5], prepared concurrently with this document, summarizes the results of the five-year evaluation and provides concluding comments.

The progress of pupils in grades one through four was assessed by means of classroom observation, individual and group tests in English, French, Social Studies and in attitude towards the learning of French. Pupils in grades one and two were involved in an integrated Social Studies program where the study of Social Studies through French[6] was combined with attention to the language. At grades three and four the regular French Social Studies program was taught in addition to the regular period of French language arts.

Only those children for whom parental consent forms were available participated in the testing program.

1. METHODOLOGY

1.1 Testing Program

The proposed testing schedule was modified (Table 1) to reduce the number of tests in grade one through three and to include grade four.

An opportunity arose to evaluate the second language performance and language attitude of grade four pupils in a

school board which offers a kindergarten program similar to that followed by pupils at St. Joseph Elementary School.

As in previous years, tests were administered by fluently bilingual graduate students who have had experience in testing young children. Group tests were administered in the classroom, individual testing was conducted in a quiet room in an atmosphere of relaxed cooperation between pupil and examiner.

1.2 Subjects

Pupils in grades one, two and three, designated as former Bilingual Kindergarten, are those who had graduated from the full-day kindergarten which consisted of a half-day in English and a half-day in French. Pupils who entered St. Joseph School after kindergarten are designated as new arrivals or newcomers. Pupils in the three major comparison groups, Regular English, Post-Reception and Regular French had all participated in the kindergarten testing. Unfortunately the numbers in each of these groups have diminished over the years. The numbers in each group are reported in the tables at the end of the report.

Pupils in groups designated as Comparison Group One and Comparison Group Two at the grade four level have taken part in one of two innovative programs in other school boards.

The lack of complete written information precludes a detailed description of the enriched French programs that have been developed and implemented in the school boards from which the comparison groups were drawn.

Pupils in Comparison Group One have followed a full-day bilingual program, one half-day in English, one half-day in French and an enriched French language program subsequent to this. The program in this Board is based on a modular, cyclic approach. Rationale, goals and objectives are clearly stated. Objectives reflect attitudinal, linguistic and cultural concerns. They encompass comprehension and expression of oral and written language. The program organization describes the components and interrelations of the modules as well as the type of teaching materials and procedures to be used in the classroom. Modules differ in specific objectives and content but follow a basic organizational structure including texts, pictorial illustrations, songs, lists of classified vocabulary, grammar structures, conjugation patterns, phoneme-grapheme correspondence, etcetera. They also include the percentage breakdown allocated to oral and written expression and to auditory and reading comprehension. Samples of test items are provided within the module.

On the other hand, the documents received from the school board which provides the second comparison group at grade four are somewhat less substantial and explicit. In general the program adheres to the functional approach advocated by the Ministry. It is organized around themes with the stated intention of covering one a month.

For each monthly theme, new and previously taught structures are enumerated, the latter for the sake of reinforcement of learning. Each structure is followed by a model consisting

of a question and corresponding affirmative and negative answers. This type of content seems to emphasize oral expression. Available documents provide no additional information concerning teaching strategies or evaluation procedures.

1.3 Tests

All tests listed in Table 2 with the exception of the Attitude Questionnaire have been described in previous reports. A description of each of the nonstandardized instruments which have been developed by the authors of this report is provided below as well as one standardized instrument the French Reading Comprehension Test for Grades 2 to 6 which has not been described elsewhere.

- Content Examination.

A content examination was individually administered to the kindergarten and to the grade one and grade two follow-up groups at St. Joseph School. The major purpose of this oral test is to assess the extent to which the content objectives of the kindergarten program and of the Integrated Social Studies and second language programs are acquired. At grade one, the test takes thirty minutes to administer and consists of questions on the notions of space, time and society which have been articulated in the intermediate objectives of the program. The children are asked to point to, name and situate in time and space, certain elements and phenomena depicted in the drawings. They are also expected to identify and explain

certain relationships and to draw on their personal experiences in responding to questions. At grade two, the test takes approximately forty minutes. With the aid of pictures, the pupil is expected to show to what extent he has acquired the notions and skills taught during the year from the second book, Moi et les miens, of the Jean-Luc Picard's Social Studies series, Eveil à la réalité.[7] More specifically, the twenty-nine questions of this examination deal with man's needs (food, lodging, clothing), some immediate aspects of the family and physical environments, as well as a few professional services and trades necessary to life in society.

At all levels, appropriate responses volunteered in English are given credit. The maximum possible score at kindergarten is sixty-nine; at grade one, eighty-nine and at grade two, one hundred.

- Oral Language Measure (O.L.M.).

This oral test consists of a ten-minute, tape-recorded interview where each child responds to questions dealing with the events represented in a series of drawings. At the grade one level, the theme of the series is a family picnic and at grade two, the topic is the extinguishing of a school fire.

This is a test of oral expression which is partly structured and partly free. The child is asked to identify or describe items depicted in the drawings, to formulate possible conversations among the characters, to relate the

total story and to explain a specific event depicted in one of the scenes. The ratings and parameters are similar at all levels. Each of the following five parameters was rated on a scale of 0 to 5: comprehension of an event depicted in the series, lexical development, grammatical, discursive and enunciative proficiency for the total production. One parameter - capacity for personal expression in explaining perception of an event - was rated on a scale of 0 to 3. In addition, a word count was made of English and French words based on a written transcription of taped responses.

- Verbal Interaction Analysis

This is the authors' adaptation of a technique developed for the classroom by Flanders.[8] It is an observational tool which focuses the observer's attention on the frequency and direction of verbal exchanges between pupil and teacher and pupil and pupil. Verbal events (pupil statements, questions, commands, exclamations) through which the child attempts to communicate his thoughts are recorded on a grid. In view of the fact that only one child is observed at a time, verbal behavior and any paralinguistic behavior can be reported in detail. An observer familiar with the classroom routine and trained in the use of the grid, stays close to a child for a period of ten minutes, recording utterances, in as much detail as possible, then moves on to a second child.

Observations were conducted by two trained observers during the French period. Eight Anglophone pupils were selected as subjects prior to the observation session. Each was observed for a total of twenty minutes in two ten-minute nonconsecutive blocks of time. Pupils in grades one, two and four were involved in the observation.

- Pupil Attitude Questionnaire

This is a two-part questionnaire administered for the purpose of determining in a global way the pupil's interest in, enjoyment of, and desire to use French within and outside the school setting. In Part 1 (14 items), the pupils must respond "yes" or "no" to statements about the relative difficulty of the second language and interest in pursuing the study of the language. Part 2 (20 items) provides a statement with a multiple-choice response in which the pupils can indicate the extent of their commitment to the use of the language and their interest in using the language in situations outside the school setting. The questionnaire is reproduced in Appendix A.

- French Reading Comprehension Test (OISE)[9]

This is the third of the four levels covered by the Tests de Lecture battery (French Reading Comprehension Tests for Grades 2 to 6) which was elaborated in the context of the longitudinal evaluation of French immersion and bilingual education programs in Ontario carried out by the Bilingual

Education Project of the Modern Language Center at the Ontario Institute for Studies in Education.

It consists essentially of short passages followed by multiple-choice questions based on the content. According to the Test Manual, "the passages were either adapted from already published material or written by a specialist in children's literature." The questions are designed to test inferential as well as literal French reading comprehension. As this is a measure of second language reading skill, it is obvious that scores depend on knowledge of French vocabulary and structure as well as the general ability to decode written language and supplement details from general meaning. As low scores may be associated with deficiency in either or both of these factors, additional information on pupils' French oral proficiency and English reading level would be useful for adequate assessment of pupils' ability to read French.

The grade four test is to be administered within thirty minutes. It is made up of nine passages and thirty-four multiple-choice questions. Preliminary instructions given in English provide for the opportunity to practise answering one question on a sample passage. The nine passages vary in length from 9 to 24 lines comprising approximately 1100 words. They cover a variety of genres: biographical and geographical notes, fables, narratives including descriptions of settings and characters as well as dialogues and verbalized thought. All contain compound and complex sentences. The present tense

prevails but there are many instances of other verbal forms such as the simple past, the imperative and the subjunctive present. The questions are worded in lexical and structural forms that differ from the linguistic forms used in the passages; pupils cannot depend on automatic cues in their responses.

The Test Manual provides a table of percentile ranks based on a mean total score of 21.39 (S.D. 7.33) yielded by a Canada-wide sample of 657 predominantly English-speaking students about to complete a Grade 4-program in the context of a bilingual education curriculum. In the present study, the scoring of the test takes into account not only the total number of correct answers (maximum raw score 34), but also the number of correct answers on the first five passages, identified as part one (18 questions) and on the last four passages, identified as part two (16 questions). In addition, with a view to identifying good but slow readers, the number of questions left unanswered was recorded and the percent correct was calculated on the basis of the number of questions attempted.

2. PRESENTATION AND DISCUSSION OF RESULTS

Results of analyses are presented in Tables 2 to 41 located at the end of this report. In some instances little import can be given to the statistical analysis because the number in each of the groups is small.

2.1 Grade One

Testing at grade on was not part of the original plan to test three cohorts at this level. There was no intention to compare this fourth group with one from outside the school. The purpose of the testing was to determine whether results obtained by this group were consistent with those obtained in previous years. A summary of means on selected tests are presented in Table 2 for cohorts 1 through 4. Inspection of Table 2 reveals some fluctuation in results from year to year. Results of cohort 1 are higher than in succeeding years. It should be noted that there were some minor modifications to the O.L.M. (French) and the Content Examination subsequent to testing in the first year of the program.

Table 3 contains the results of correlations among the French Comprehension (OISE) Test, the Metropolitan Achievement Tests, the Raven's and the French Oral Language Measure. There is only one high correlation (over .80), that between the French Comprehension total score and the total score for the Oral Language Measure pointing to possible common contributing factors. Reasoning ability as measured by the Raven's and performance in the English language as measured by the Metropolitan Achievement Tests are poorly intercorrelated.

The result of a comparison between pretest and posttest means on the French Comprehension (OISE) Test is found in Table 4. Although there is an increase from pretest to posttest on the total score, there is no statistically significant

difference on the total nor on subscores. Such an outcome is not unexpected given that a period of only about fifty minutes per day is devoted to French at grade one. Interestingly, a comparison with norms for immersion students reported in the OISE Test Manual reveals a relatively small difference between this former bilingual kindergarten group and the immersion sample. On the total score, the immersion grade one pupils achieved a mean of 28.50 as compared to the 26.00 of the grade one pupils at St. Joseph's. Part scores are 13.53, 5.17 and 9.80 for immersion as compared to 13.31, 4.85 and 7.85 for the former bilingual kindergarten group.

The results of the Verbal Interaction Analysis carried out in grade one, toward the end of the scholastic year, are summarized in Tables 5 and 6. Inspection of Table 5 reveals that fewer verbal events were recorded in the spring observation session than in the fall session (99:129) whether conversation was in English (60:68) or in French (39:61). The only increase from fall to spring is in the number of French utterances produced by the girls (27:29).

The breakdown of six boys and four girls has to be taken into consideration in establishing the average number of utterances per student by session and by language as shown in the following table:

	Fall				Spring			
	English		French		English		French	
Male	(59/6)	9.9	(34/6)	5.6	(55/6)	9.1	(10/6)	1.6
Female	(9/4)	2.2	(27/4)	6.7	(5/4)	1.2	(29/4)	7.2

Inspection of the above table reveals a different linguistic behavior for boys compared to girls. In the two sessions, the girls produced, on the average, fewer English but more French utterances than did the boys; in the spring, the ratio of French to English usage was twice as large as that in the fall.

Analysis of the pattern of verbal exchanges (Table 6) shows slight changes from one session to the other. In the fall, conversation with the teacher represents 70% of the total verbal interaction; in the spring, it reduces to 60%. In both sessions, when students are in interaction with their teacher, they respond more frequently than they initiate conversation.

The responding and initiating patterns differ not only in proportion but also in language used. On the whole, students tend to respond in French about three times as frequently as in English. On the other hand, the use of French in initiating conversation increased from 20% in the fall to 50% in the spring. Calculation based on sex ratio (6:4) mentioned above reveals that this increase was a function of the use of the language by girls.

In general, verbal exchanges occur less frequently with classmates than with teachers and are dominated by initiating conversations which are characteristically in English. French is used typically to respond to the teacher and less frequently to initiate conversation with her.

2.2 Grade Two

The results of a t-test between mean scores obtained by the former bilingual kindergarten and the reception class on the Raven's and the Metropolitan Achievement Tests are summarized in Table 7. These two groups performed similarly on these tests with no statistically significant differences. Consequently a t-test, rather than an analysis of covariance using these two tests as covariates, was used in subsequent analyses.

On the other hand there are statistically significant differences between means obtained by these two groups on most of the French language variables listed in Table 8.

Results of the Content (Notions) Examination are summarized in Table 9. Although the former bilingual kindergarten pupils responded in English significantly more frequently than did the reception pupil, there was no difference in performance on knowledge of content.

The results of the verbal interaction analysis are summarized in Tables 10 and 11. Of the total of 274 verbal events noted, 60% were recorded in the spring with a decrease of French utterances from fall to spring (66%:36%). In each of the sessions, the girls produced fewer English utterances and more French utterances than the boys, but fewer French utterances in the spring than in the fall.

Approximately 75% of the verbal exchanges occur with the teacher and consist more in responding than in conversation opening. Nearly 83% of this responding takes place in French. While

responding in French diminishes from fall to spring, students initiate conversation with their teacher in French almost twice as often in the spring as in the fall. Moreover, the girls use more French than the boys in both sessions whether interaction consists of initiation or reaction.

Verbal exchanges with other students show a different trend. They are nine times more numerous in the spring than in the fall, with 90% of these exchanges consisting of initiation of conversation. With the exception of a single instance in each session, all verbal exchanges with other students take place in English.

In summary, students tend to respond in French when addressed by the teacher and to initiate conversations in English whether with teacher or other students.

2.3 Grade Three

The results of testing in grade three are found in Tables 12 through 33.

The results of analyses of variance comparing mean scores on the French Reading Comprehension (OISE) Test obtained by three comparison groups (former bilingual kindergarten, newcomers to the grade three at St. Joseph and regular English) are found in Table 12. Inspection of the table reveals no significant difference on pretest total or part scores. A similar result for posttest scores is found in Table 13. Typically, the mean obtained by the former bilingual kindergarten pupils at grade three is greater than that of the newcomers who, in turn, achieve

a higher average than the regular English group. The means are considerably lower than the norms for pupils following immersion programs (OISE Norms).

A pattern similar to that described above is found with results obtained on the Buteau-Gougeon French Reading Test (Tables 14 and 15).

On the pretest results of the French Oral Language Measure (Table 16), there is a significant difference between the greater means obtained by the former bilingual kindergarten group and the newcomers and those obtained by the regular English group. The trend is the same for the posttests but, for the most part, the differences do not reach significance (Table 17). The difference between the mean obtained by the former bilingual kindergarten group and that obtained by the regular English group on the Metropolitan Achievement Tests (Table 18) favours the latter group but does not reach statistical significance.

Tables 19 to 29 inclusive contain the results of t-tests between pre and posttest means for each of the three comparison groups on the French Reading Comprehension Test, the Buteau-Gougeon French Reading Test and the French Oral Language Measure. With few exceptions there are no significant differences between pretest and posttest means. One might claim that the few differences found in the case of the newcomers could reflect the initial gains of those who are benefiting from exposure to an enriched program. This argument is not as convincing as it might have been had similar gains been manifested on other measures.

Because of the small number of former reception pupils (4) no statistical analyses were carried out between the former reception group and any of the other groups. Inspection of Tables 21, 22 and 23 reveals that, on most total and subscores of the French tests (OISE, O.L.M., French Reading), the former reception group achieves substantially higher mean scores than the former bilingual kindergarten group, the regular English group and the newcomers.

The means on each variable by sex across programs are presented in Tables 30 through 33. Mean scores for females are close to those obtained by males with no significant differences and no obvious trends on the overall results favouring females over males.

2.4 Grade Four

The results of analyses at grade four are summarized in Tables 34 through 41. The St. Joseph group consists of all students, the former bilingual kindergarten pupils and pupils who entered the school in grades one and two. The two comparison groups have been described previously.

An analysis of variance (Table 34) on the French Reading Test reveals no significant difference between subscores with the exception of number of blanks where the mean of the second comparison group is greater than that of the first and that of the St. Joseph grade four group. On total score and on subscores, the St. Joseph group obtains a slightly higher mean than that of either of the two comparison groups.

The difference between group means for total and part scores on the Attitude Questionnaire is significant (Table 35). Comparison Groups 1 and 2 demonstrate, on the average, stronger positive attitudes towards their experiences in French class and their own perceptions about success in French than does the group from St. Joseph School.

A copy of the questionnaire is provided in Appendix A and a chi-square analysis by question for the St. Joseph School (Board A) and for those pupils in Comparison Group 1 (Board B) is summarized in Appendix B. It must be emphasized that these results reflect the attitudes of a small group of students at one point in time. Without repeated testings over a few years, no conclusions can be drawn about consistent attitudes over time.

As regards the results of the St. Joseph students, the majority seem to experience no concern about speaking French: they are not shy (question 7), they do not become nervous (9) nor are they afraid to be laughed at (4).

When comparing French with other subjects, most students do not consider French more difficult than geography (2) or mathematics (13) and consider it as important as mathematics (10).

On the other hand, only 25% would miss another class other than French (14). The majority claim that they do not look forward to the French period (5) and very few enjoy French as much as or more than any other subject (8, 11). (Those who find French interesting are fewer than those who find it not interesting at all.) Very few would wish more time allocated to French (12).

The majority wish they could speak many languages (3) but only 50% enjoy meeting and listening to speakers of other languages.

In general, they pay attention to their French homework: 80% mention that they work carefully (22), but this concern does not seem to be related to a strong appreciation of the French language. If no French were taught in school, 35% would not bother learning it at all and only 15% would try to take lessons (16); if French were optional less than 50% would take it (19). If they had to select a summer camp, 60% would choose an English camp and 5% would be willing to attend a French camp (27).

During the French class, the use of French is supported to the extent that 40% would like to use French exclusively (17); their willingness to interact is somewhat limited: 55% answer as much as possible and 30% never say anything (21). (One might hypothesize a similar pattern during English classes.) In the case of extra-curricular French projects, 25% would definitely refuse and 60% would volunteer only if they were asked to do so by teachers.

Outside of school, in general, if they had the opportunity to use French 70% of the respondents would speak French once in a while and English as much as possible, and the balance would not avail themselves of this opportunity. On the other hand, in a specific situation such as in a store, 75% mention that they speak French as much as possible.

A large number never read French materials: 70% never choose a French book in the library (20); 85% never read a

French comic book (29); 55% never read a French story book at home (31). Moreover French media is not popular among this group of students: 75% change stations when they hear French songs (25); 80% never attend French movies (30); 50% watch French TV sometimes and 45% never (28).

These data are similar in trend to the use of French at home and in their immediate social milieu. With their parents, 50% never speak French and only 10% as much as possible (32); with their relatives, 60% never speak French and only 5% as much as possible (33); with their friends, 80% never speak French and only 5% as much as possible (34).

When the grade four data are broken down by sex, for males, the differences (Tables 36, 37) between the three groups reflect differences found in the analyses of the total data.

For females, the results on the French Comprehension Test (Table 38) indicate that St. Joseph students achieve significantly higher scores on the total and on part two. On the Attitude Questionnaire (Table 39) the only difference which reaches significance is that between the first comparison group and the St. Joseph group where the former achieves a higher mean score on part two. Although there is no statistically significant difference between the remaining means (total and part one), the results favour the two comparison groups.

Results of the verbal interaction analysis in St. Joseph School are summarized in Tables 40 and 41. Of the 175 recorded verbal events over 80% were produced in French with the average

number of productions per student nearly equal for boys and girls whether in English (4.8:4.0) or French (18.4:17.3).

Examination of the general interaction pattern reveals that classroom conversation takes place 5 times as frequently with the teacher as with the student. About 88% of the exchanges with the teacher are in French with 90% of these being cases of responding rather than initiating conversation.

Verbal interaction with other students consists exclusively of cases of engaging conversation, as often in English as in French, and as frequently by boys as by girls. Comparison of the interaction patterns with teacher and with students reveals that students initiate conversation with the teacher as frequently as with other students whether they use French or English.

The above results of the interaction in St. Joseph School are similar to those obtained in a class where grade four pupils had been exposed to approximately the same amount of instruction in French as those at St. Joseph. Because of the type of class being conducted, there is a different number of verbal exchanges. The interaction patterns between teacher and pupil and pupil and pupil in English and French are alike.

3. CONCLUDING REMARKS

In this final year of testing, differences between the groups compared at each level were in the expected direction with former reception kindergarten students achieving higher means than former bilingual kindergarten students who, in turn,

do better than the newcomers to the program and the regular English comparison group. Where in grades one and two and at the beginning of grade three there are major differences between the former bilingual kindergarten classes and the regular English classes, by the end of grade three, these differences are there but do not reach significance. Where in the results at earlier grades there were significant differences between pretest and posttest means achieved by pupils participating in the experimental program, by grade three, such differences, for the most part, do not reach significance. Such a result is not unexpected given that the impact of the bilingual kindergarten program and the intensive exposure to French diminishes over time. The lack of significant gain in mean scores over a year as assessed by standardized tests in no way infers that the pupils do not improve in knowledge of French. Results on classroom tests throughout the year would reflect achievement in specific instructional objectives related to linguistic performance in the FSL program and to mastery of content in the French social studies program.

In some of the testing in the earlier years (kindergarten, grade one) there were some significant sex differences in language performance. By grade three, differences are not great and do not consistently favour one sex over the other. The difference in the number of French responses provided by girls as compared to boys in the verbal interaction analysis at grade four is interpreted as a function of the overall

tendency for girls to respond more frequently than boys, rather than some index of a difference in performance in the language.

If the bilingual kindergarten has had a long-term impact, it appears to be in the pupils' willingness to verbalize in French as evidenced in the French oral tests, in the perception of their own ability vis-à-vis other pupils and in their reported interest in using French, if required, in day to day situations. This, rather than outstanding achievement on standardized instruments, may be the major factor which enhances their preparation for the grade six immersion experience. If so, then it is perhaps the opportunity to engage in more natural contacts though extracurricular activities which should be encouraged, rather than any future attempts to introduce a limited number of additional courses in French into the elementary school curriculum.

NOTES

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TABLE 1

ACTUAL TESTING SCHEDULE (1983-1984)

GROUP:	BILINGUAL/ FOLLOW-UP	RECEPTION/ POST-RECEPTION	ENGLISH	FRENCH
TESTS				
GRADE ONE				
Content	Spring			
Fr. Comp. (Level 1)	Fall/Spring			
Metrop. (Lang.)	Spring			
O.L.M. (Fr.)	Spring			
Verbal Interaction	Fall/Spring			
GRADE TWO				
Content	Spring	Spring		
Metrop. (Lang.)	Spring	Spring		
O.L.M. (Fr.)	Spring	Spring		
Peabody (Fr.)	Spring	Spring		
Raven	Fall	Fall		
Verbal Interaction	Fall/Spring			
GRADE THREE				
Metrop. (Lang.)	Fall	Fall	Fall	
Metrop. (Read.)	Fall	Fall	Fall	
O.L.M. (Fr.)	Fall/Spring	Fall/Spring	Fall/Spring	
Fr. Comp. (Level 3)	Fall/Spring	Fall/Spring	Fall/Spring	
Fr. Reading	Fall/Spring	Fall/Spring	Fall/Spring	
GRADE FOUR	St. Joseph School	Comparison Gr. One	Comparison Gr. Two	
Attitude Questionnaire	Spring	Spring	Spring	
Fr. Read. Comprehension	Spring	Spring	Spring	
Verbal Interaction	Spring	Spring	Spring	

TABLE 2

TABLE OF MEANS FOR TESTS ADMINISTERED AT GRADE ONE - COHORTS 1 to 4

VARIABLE	GRADE ONE (FORMER B.K.) COHORT 4 N:13	COHORT 3 N:12	COHORT 2 N:15	COHORT 1 N:13
Raven's		19.10	17.40	20.42
Fr. Comp. (OISE) Posttests				
Total (Max:45)	26.00	27.99	23.21	28.08
Part 1 (Max:22)	13.31	13.46	11.86	13.15
Part 2 (Max: 9)	4.84	5.19	4.21	5.46
Part 3 (Max:14)	7.84	9.33	7.14	9.46
O.L.M. (Fr.) Posttests				
Gen. Comp. (0-5)	3.45	2.58	3.80	4.15
Lexical Q. (0-5)	2.27	2.13	2.40	3.08
Gramm. Q. (0-5)	2.00	1.81	2.12	3.38
Discus. Q. (0-5)	1.64	1.45	2.33	2.61
Enun. Q. (0-5)	2.45	1.55	2.00	4.00
Pers. Exp. (0-3)	.91	1.04	.80	1.30
Lexical Quantity	96.09	89.66	95.73	57.77
English Words	66.55	48.73	29.80	1.76
Peabody (Eng.)		61.27	64.91	
Metropolitan (Max:40)	27.09		23.21	
Content (Posttests)				
No. Corr. Ans. (89 Max.)	84.45	81.13	65.83	62.23
% Correct	92.45	91.36	77.07	71.08
No. Eng. Quest.	7.64	6.68	4.80	1.62
No. Eng. Answers	21.91	10.26	20.33	4.00
No. Unans. Quest.	4.55	1.21	.60	.92

TABLE 3

GRADE ONE (FORMER BILINGUAL KINDERGARTEN STUDENTS): MATRIX OF CORRELATION COEFFICIENTS FOR FOUR MEASURES AND NUMBER OF OBSERVATIONS

	1	2	3	4
1. OISE FRENCH COMP. POSTTEST TOTAL SCORE	1.0000 (13)			
2. METROPOLITAN	0.2139 (9)	1.0000 (9)		
3. RAVEN'S	0.2938 (11)	0.0392 (7)	1.0000 (11)	
4. ORAL LANGUAGE MEASURE TOTAL SCORE	0.8870 (11)	0.2278 (8)	0.1324 (10)	1.0000 (11)

TABLE 4

GRADE ONE (FORMER BILINGUAL KINDERGARTEN STUDENTS)

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE OISE FRENCH COMPREHENSION TEST: LEVEL ONE

	PRETEST			POSTTEST				
VARIABLE	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	PROB.	SIGNIF.
OISE FR. COMP. PART I(Max.22)	13	11.3846	6.1852	13	13.3077	5.2023	0.3994	N.S.
PART II(Max.9)	13	4.8462	2.5115	13	4.8462	2.8532	1.0000	N.S.
PART III(Max.14)	13	6.6923	2.9829	13	7.8462	3.2621	0.3560	N.S.
TOTAL (Max.45)	13	22.9231	11.0639	13	26.0000	10.8167	0.4803	N.S.

TABLE 5

BREAKDOWN OF PUPIL VERBAL EVENTS IN GRADE ONE BY SESSION (FALL, SPRING), BY LANGUAGE SPOKEN DURING CLASS (ENGLISH, FRENCH) AND BY SEX (BOY, GIRL)

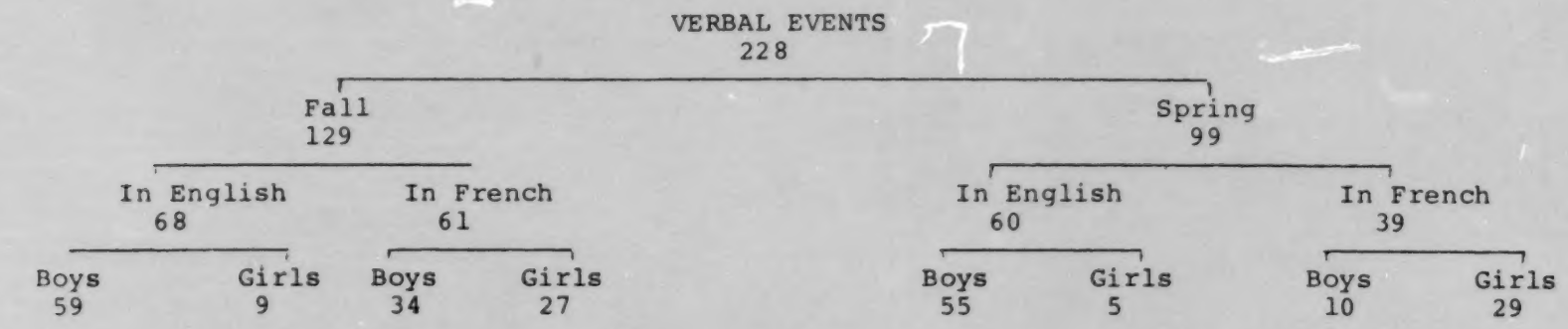

TABLE 6

BREAKDOWN OF PUPIL VERBAL EXCHANGES IN GRADE ONE WITH TEACHER AND WITH STUDENTS BY TYPE OF VERBAL INTERACTION (RESPONDING OR INITIATING CONVERSATION), FOR EACH SESSION (FALL, SPRING) IN EACH LANGUAGE (ENGLISH, FRENCH) AND BY SEX (BOYS, GIRLS)

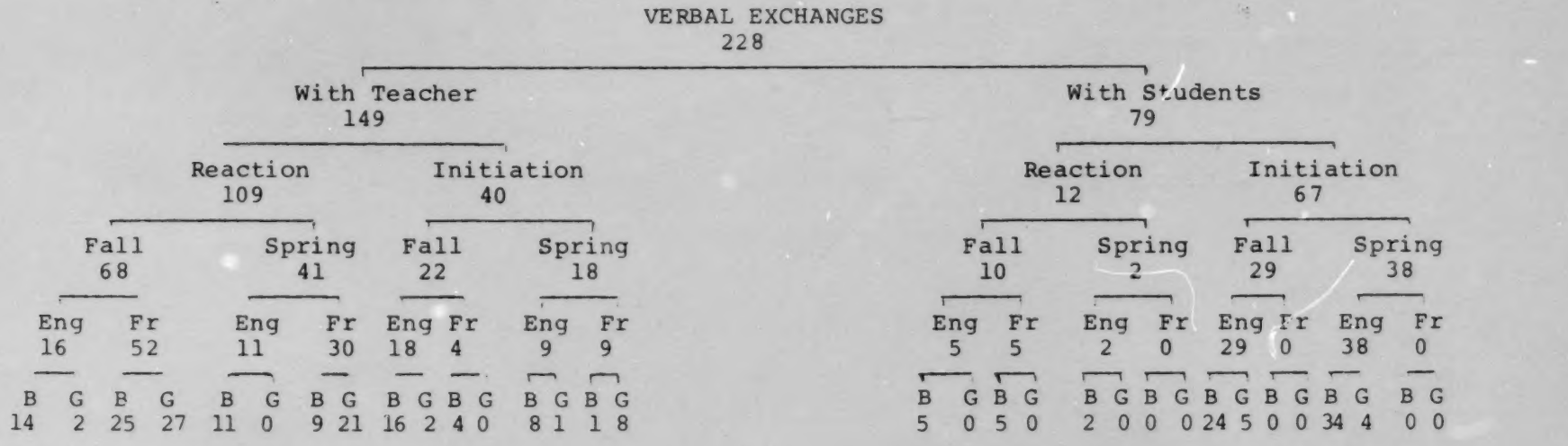

TABLE 7

GRADE TWO (STUDENTS FROM ORIGINAL SAMPLE)

RESULTS OF t-TESTS ON DIFFERENCES BETWEEN MEAN SCORES OBTAINED ON THE RAVEN'S AND THE METROPOLITAN ACHIEVEMENT TESTS

GROUP:	FORMER BILINGUAL KINDERGARTEN			RECEPTION CLASS				
VARIABLE:	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	PROB.	SIGNIF.
RAVEN'S	7	23.2857	3.8117	6	25.8333	2.4833	0.1901	N.S.
M.A.T.	6	41.6667	8.7331	6	40.0000	8.9219	0.7504	N.S.

TABLE 8

GRADE TWO (STUDENTS FROM ORIGINAL SAMPLE)

RESULTS OF t-TESTS ON DIFFERENCES BETWEEN MEAN SCORES OBTAINED ON TWO FRENCH TESTS

GROUP:	FORMER BILINGUAL KINDERGARTEN			RECEPTION CLASS				
VARIABLE:	N	X	S.D.	N	X	S.D.	PROB.	SIGNIF.
PEABODY (FRENCH	6	36.1667	13.3778	6	87.3333	23.9221	0.0010	XX
OLM - Gen. Comp. (max.5)	6	3.5000	1.8708	6	4.8333	0.4082	0.1189	N.S.
" - Lexical Q. (max.5)	6	1.6667	1.2111	6	3.8333	0.4082	0.0020	XX
" - Gramm. Q. (max.5)	6	1.6667	1.1690	6	3.3333	0.5164	0.0020	XX
" - Discursive Q. (max.5)	6	0.6667	0.8165	6	2.5000	0.8367	0.0033	XX
" - Enunciative (max.5)	6	1.3333	1.5055	6	3.8333	0.4082	0.0028	XX
" - Pers. Exp. (max.3)	6	0.3333	0.5164	6	1.5000	0.5477	0.0035	XX
" - No. of Fr. Words	6	77.8333	46.5421	6	162.0000	91.0538	0.0714	N.S.
" - No. of Eng. Words	6	98.3333	115.5035	6	1.0000	2.4495	0.0060	XX
" - Total Score	6	8.6667	6.4083	6	19.833	1.4720	0.0019	XX

TABLE 9

GRADE TWO (STUDENTS FROM ORIGINAL SAMPLE)

RESULTS OF t-TESTS ON DIFFERENCES BETWEEN MEAN SCORES OBTAINED ON THE NOTIONS TEST

GROUP:	FORMER BILINGUAL KINDERGARTEN			RECEPTION CLASS				
VARIABLE:	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	PROB.	SIGNIF.
Total Score (max.100)	6	85.0000	6.1968	6	84.6667	5.7850	0.9252	N.S.
N. of Q. Trans. in Engl.	6	24.0000	14.0143	6	2.6667	3.6697	0.0048	XX
N. of English Replies	6	27.0000	13.2514	6	0.8333	1.1690	0.0007	XXX
N. of Q. without Replies	6	1.0000	1.0954	6	1.3333	0.8165	0.5634	N.S.

TABLE 10

BREAKDOWN OF PUPIL VERBAL EVENTS IN GRADE TWO BY SESSION (FALL, SPRING), BY LANGUAGE SPOKEN DURING CLASS (ENGLISH, FRENCH) AND BY SEX (BOY, GIRL)

VERBAL EVENTS 274							
Fall 108				Spring 166			
In English 37		In French 71		In English 106		In French 60	
Boys 27	Girls 10	Boys 27	Girls 44	Boys 60	Girls 46	Boys 20	Girls 40

TABLE 11

BREAKDOWN OF PUPIL VERBAL EXCHANGES IN GRADE TWO WITH TEACHER AND WITH STUDENTS BY TYPE OF VERBAL INTERACTION (RESPONDING OR INITIATING CONVERSATION), FOR EACH SESSION (FALL, SPRING) IN EACH LANGUAGE (ENGLISH, FRENCH) AND BY SEX (BOYS, GIRLS)

VERBAL EXCHANGES 274																															
With Teacher 207																With Students 67															
Reaction 127								Initiation 80								Reaction 06								Initiation 61							
Fall 72				Spring 55				Fall 29				Spring 51				Fall 0				Spring 06				Fall 07				Spring 54			
Eng 9		Fr 63		Eng 12		Fr 43		Eng 21		Fr 08		Eng 36		Fr 15		Eng 0		Fr 0		Eng 05		Fr 01		Eng 07		Fr 0		Eng 53		Fr 01	
B 6	G 3	B 26	G 37	B 8	G 4	B 15	G 28	B 15	G 6	B 1	G 7	B 21	G 15	B 3	G 12	B 0	G 0	B 0	G 0	B 1	G 4	B 1	G 0	B 6	G 1	B 0	G 0	B 30	G 23	B 1	G 0

TABLE 12

GRADE THREE

ANALYSIS OF VARIANCE, BY PROGRAM, ON THE OISE FRENCH READING COMPREHENSION PRETEST SCORES

VARIABLE:	GROUP: EXP.(FORMER B.K.) (N= 12) $\bar{X}$	EXP.(NEWCOMERS) (N= 11) $\bar{X}$	REG. ENGL. (N= 8) $\bar{X}$	PROB.	SIGNIF.
PART ONE (max.:16)	5.2500	3.5455	4.0000	0.3971	N.S.
PART TWO (max.:12)	4.0823	3.0000	3.2500	0.4316	N.S.
TOTAL (max.:28)	9.3333	6.5455	7.2500	0.3553	N.S.
No. of Omitted Quest.	0.1667	2.0909	0.000	0.4508	N.S.
% Correct Answers	35.500	23.364	25.875	0.3384	N.S.

TABLE 13

GRADE THREE

ANALYSIS OF VARIANCE, BY PROGRAM, ON THE OISE FRENCH READING COMPREHENSION POSTTEST SCORES

VARIABLE:	GROUP: EXP.(FORMER B.K.) (N= 11 $\bar{X}$	EXP.(NEWCOMERS) (N= 10) $\bar{X}$	REG. ENGL. (N= 8) $\bar{X}$	PROB.	SIGNIF. (Duncan .05)
PART ONE (max.:16)	6.2727	5.4000	4.5000	0.4720	
PART TWO (max.:12)	4.2727	3.2000	2.3750	0.0373	Exp.> RE
TOTAL (max.:28)	10.545	8.600	6.875	0.1775	
No. of Omitted Quest.	0.0000	0.2000	0.0000	0.1392	
% Correct Answers	37.545	31.000	24.625	0.1858	

TABLE 14

GRADE THREE

ANALYSIS OF VARIANCE, BY PROGRAM, ON THE B. & G. FRENCH READING PRETEST SCORES

VARIABLE:	GROUP: EXP.(Former B.K.) (N= 12) $\bar{X}$	EXP.(NEWCOMERS) (N= 11) $\bar{X}$	REG. ENGL. (N= 8) $\bar{X}$	PROB.	SIGNIF. (Duncan .05)
LITERAL COMP. (max.: 4)	1.5000	0.9091	1.3750	0.4213	
INFERENTIAL " (max.: 8)	1.7500	1.0909	2.2500	0.0806	RE > NC
EVALUATIVE " (max.: 2)	1.1667	1.3636	1.3750	0.7045	
TOTAL (max.:14)	4.4167	3.3636	5.000	0.1991	

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TABLE 15

GRADE THREE

ANALYSIS OF VARIANCE BY PROGRAM ON THE B. & G. FRENCH READING POSTTEST SCORES

VARIABLE:	GROUP: EXP. (Former B.K.) ($N = 11$) $\bar{X}$	EXP. (Newcomers) ($N = 11$) $\bar{X}$	REG. ENGL. ($N = 8$) $\bar{X}$	PROB.	SIGNIF.
LITERAL COMP. (max.: 4)	1.6364	1.0000	1.5000	0.3332	N.S.
INFERENTIAL " (max.: 8)	2.3636	2.3636	2.7500	0.8128	N.S.
EVALUATIVE " (max.: 2)	1.0000	0.6364	1.2500	0.1928	N.S.
TOTAL (max.:14)	5.0000	4.000	5.5000	0.4375	N.S.

TABLE 16

GRADE THREE

ANALYSIS OF VARIANCE, BY PROGRAM, ON THE FRENCH ORAL LANGUAGE MEASURE PRETEST SCORES

VARIABLE:	GROUP: EXP. (Former B.K.) ($N=12$) $\bar{X}$	EXP. (Newcomers) ($N=11$) $\bar{X}$	REG. ENGL. ($N=8$) $\bar{X}$	PROB.	SIGNIF.
Gen. Comp. (0-5)	4.000	3.1818	1.6250	0.0110	Ex.,NC > RE
Lexical Qual.(0-5)	2.5000	2.3636	0.8750	0.0673	Ex.,NC > RE
Gramm. Qual. (0-5)	2.4167	2.0000	0.3750	0.0077	Ex.,NC > RE
Discursive Qual.(0-5)	1.6667	2.1818	0.3750	0.0362	NC > RE
Enunc. Qual. (0-5)	2.0833	2.2727	0.5000	0.0399	NC,Ex. > RE
Pers. Exp. (0-3)	0.6667	1.1818	0.2500	0.0387	NC > RE
No. of Fr. Words	151.75	128.00	69.75	0.1501	N.S.
No. of Engl. Words	38.750	39.000	79.125	0.1118	N.S.
Total Score (0-28)	13.333	13.182	4.000	0.0235	Ex.,NC > RE

TABLE 17

GRADE THREE

ANALYSIS OF VARIANCE, BY PROGRAM, ON THE FRENCH ORAL LANGUAGE MEASURE POSTTEST SCORES

VARIABLE:	GROUP: EXP. (Former B.K.) ($N = 12$) $\bar{X}$	EXP. (Newcomers) ($N = 10$) $\bar{X}$	REG. ENGL. ($N = 8$) $\bar{X}$	PROB.	SIGNIF.
Gen. Comp. (0-5)	4.1667	3.6000	2.7500	0.1488	
Lexical Qual.(0-5)	2.9167	2.6000	1.7500	0.1531	
Gramm. Qual. (0-5)	2.5833	2.1000	1.1250	0.0754	Ex.> RE
Discursive Qual. (0-5)	1.8333	2.000	0.8750	0.2224	
Enunc. Qual. (0-5)	2.6667	2.4000	1.5000	0.2510	
Pers. Exp. (0-3)	0.8333	1.0000	0.5000	0.3895	
No. of Fr. Words	175.33	124.10	104.25	0.1143	
No. of Engl. Words	23.200	24.583	57.375	0.0554	RE > Ex., NC
Total Score (0-28)	15.000	13.700	8.500	0.1592	

TABLE 18

GRADE THREE

ANALYSIS OF VARIANCE, BY PROGRAM, ON THE METROPOLITAN ACHIEVEMENT TEST SCORES

VARIABLE:	GROUP: Former B.K. ($N=12$) $\bar{X}$	REG. ENGL. ($N=8$) $\bar{X}$	PROB.	SIGNIF.
Vocabulary (max.: 5)	2.6667	2.7500	0.0834	N.S.
Literal (max.:40)	23.333	28.500	0.1228	N.S.
Inferential (max.:12)	5.4167	7.7500	0.1119	N.S.
Evaluative (max.: 3)	1.5833	1.8750	0.6850	N.S.
Total (max.:60)	33.000	40.875	0.1130	N.S.

TABLE 19

GRADE THREE FORMER BILINGUAL KINDERGARTEN STUDENTS

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON TWO FRENCH READING COMPREHENSION MEASURES

VARIABLE:	PRETEST N	PRETEST X	PRETEST S.D.	POSTTEST N	POSTTEST X	POSTTEST S.D.	PROB.	SIGNIF.
OISE FR. COMP.: PART 1 (max.:16)	12	5.2500	4.2453	11	6.2727	3.5522	0.5398	N.S.
" " " PART 2 (max.:12)	12	4.0833	2.5746	11	4.2727	1.9540	0.8455	N.S.
" " " TOTAL (max.:28)	12	9.3333	6.6104	11	10.5455	5.1257	0.6306	N.S.
B. & G. READ. C.: Literal (max.: 4)	12	1.5000	1.1677	11	1.6364	1.2060	0.7857	N.S.
" " " Infer. (max.: 8)	12	1.7500	1.3568	11	2.3636	1.5667	0.3256	N.S.
" " " Eval. (max.: 2)	12	1.1667	0.8348	11	1.0000	0.8944	0.6486	N.S.
" " " TOTAL (max.:14)	12	4.4167	2.3915	11	5.0000	3.0331	0.6123	N.S.

TABLE 20

GRADE THREE FORMER BILINGUAL KINDERGARTEN STUDENTS

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE FRENCH ORAL LANGUAGE MEASURE

	PRETEST			POSTTEST				
VARIABLE:	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	PROB.	SIGNIF.
	12			12				
Gen. Comp. (0-5)		4.000	1.3484		4.1667	1.2673	0.7580	N.S.
Lexical Q. (0-5)		2.5000	1.5076		2.9167	1.3790	0.4873	N.S.
Gramm. Q. (0-5)		2.4167	1.5050		2.5833	1.5050	0.7887	N.S.
Discursive Q. (0-5)		1.6667	1.3707		1.8333	1.3371	0.7659	N.S.
Enunciat. Q. (0-5)		2.0833	1.5050		2.6667	1.4975	0.3515	N.S.
Pers. Expr. (0-3)		0.6667	0.4924		0.8333	0.7177	0.5140	N.S.
Total No. of Fr. W.		151.7500	92.2813		175.3333	88.0293	0.5284	N.S.
Total No. of Engl. W.		38.7500	50.2650		24.5833	32.7621	0.4222	N.S.
Total Score		13.3333	7.2905		15.0000	7.4346	0.5849	N.S.

TABLE 21

GRADE THREE (FORMER RECEPTION KINDERGARTEN STUDENTS; REGULAR ENGLISH PROGRAM STUDENTS)

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE OISE FRENCH READING COMPREHENSION

	FORMER RECEPTION							
VARIABLE:	N	PRETEST $\bar{X}$	S.D.	N	POSTTEST $\bar{X}$	S.D.	PROB.	SIGNIF.
OISE FR. READ. COMP.	4			4				
PART 1 (max.:16)		12.5000	2.0616		14.2500	1.7078	0.0662	N.S.
PART 2 (max.:12)		9.0000	2.1602		9.5000	1.7320	0.7304	N.S.
TOTAL (max.:28)		20.2500	4.1130		23.7500	1.7078	0.1671	N.S.
	REGULAR ENGLISH							
VARIABLE:	N	PRETEST $\bar{X}$	S.D.	N	POSTTEST $\bar{X}$	S.D.	PROB.	SIGNIF.
OISE FR. READ. COMP.	8			8				
PART 1		4.000	2.2678		4.5000	1.7728	0.6308	N.S.
PART 2		3.2500	1.3887		2.3750	1.1877	0.1971	N.S.
TOTAL		7.2500	3.4538		6.8750	2.4165	0.8050	N.S.

TABLE 22

GRADE THREE (FORMER RECEPTION KINDERGARTEN STUDENTS; REGULAR ENGLISH PROGRAM STUDENTS)

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE B. & G. FRENCH READING TEST

FORMER RECEPTION

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
B. & G. FRENCH READ. TEST	4			4				
Literal (max.: 4)		3.7500	0.5000		3.5000	0.5773	0.5370	N.S.
Inferential (max.: 8)		5.7500	1.2583		6.2500	0.5000	0.4881	N.S.
Evaluative (max.: 2)		1.0000	0.8165		1.7500	0.5000	0.1682	N.S.
TOTAL (max.:14)		10.5000	1.9149		11.5000	1.2909	0.4198	N.S.

REGULAR ENGLISH

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
B. & G. FRENCH READ. TEST	8			8				
Literal (max.: 4)		1.3750	1.1877		1.5000	1.1952	0.8368	N.S.
Inferential (max.: 8)		2.2500	0.4629		2.7500	1.1650	0.2782	N.S.
Evaluative (max.: 2)		1.3750	0.5175		1.2500	0.4629	0.6186	N.S.
TOTAL (max.:14)		5.000	1.6903		5.5000	2.1380	0.6120	N.S.

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TABLE 23

GRADE THREE FORMER RECEPTION KINDERGARTEN STUDENTS

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE FRENCH ORAL LANGUAGE MEASURE

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
Gen. Comp. (0-5)	4	5.0000	0.0000	4	5.0000	0.0000	1.000	N.S.
Lexical Q. (0-5)	4	4.5000	0.5774	4	5.0000	0.0000	0.1340	N.S.
Gramm. Q. (0-5)	4	4.2500	0.9574	4	4.5000	0.5773	0.6704	N.S.
Discur. Q.(0-5)	4	4.7500	0.5000	4	4.7500	0.5000	1.000	N.S.
Enunciat. Q. (0-5)	4	4.7500	0.5000	4	5.000	0.0000	0.3559	N.S.
Personal Exp. (0-3)	4	2.7500	0.5000	4	3.000	0.0000	0.3559	N.S.
No. of Fr. Words	4	223.5000	49.8364	4	241.2500	101.9031	0.7649	N.S.
No. of Engl. Words	4	0.0000	0.0000	4	1.5000	3.0000	0.3559	N.S.
TOTAL SCORE (0-28)	4	26.0000	2.7080	4	27.2500	0.9574	0.4175	N.S.

TABLE 24

GRADE THREE REGULAR ENGLISH PROGRAM STUDENTS

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE FRENCH ORAL LANGUAGE MEASURE

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
Gen. Comp. (0-5)	8	1.625	1.7678	8	2.750	1.8323	0.2319	N.S.
Lexical Q. (0-5)	8	0.8750	1.1260	8	1.7500	0.8864	0.1062	N.S.
Gramm. Q. (0-5)	8	0.3750	0.7440	8	1.1250	1.1260	0.1383	N.S.
Discurs. Q. (0-5)	8	0.3750	0.7440	8	0.8750	0.9910	0.2729	N.S.
Enunciat. Q. (0-5)	8	0.5000	0.7559	8	1.5000	1.1952	0.0653	N.S.
Personal Exp. (0-3)	8	0.2500	0.4629	8	0.5000	0.5345	0.3343	N.S.
No. of Fr. Words	8	69.7500	65.2944	8	104.2500	49.9135	0.2549	N.S.
No. of Engl. Words	8	79.1250	30.8241	8	57.3750	38.9063	0.2356	N.S.
TOTAL SCORE (0-28)	8	4.0000	5.0990	8	8.5000	6.0945	0.1315	N.S.

TABLE 25

GRADE THREE STUDENTS WHO JOINED THE EXPERIMENTAL SCHOOL AS OF GRADE ONE

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE TWO FRENCH READING COMPREHENSION TESTS

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
OISE FRENCH READ. COMP.								
PART 1 (max.:16)	6	3.3333	1.9664	5	5.2000	2.7749	0.2239	N.S.
PART 2 (max.:12)	6	3.0000	2.0976	5	3.4000	0.8944	0.7022	N.S.
TOTAL (max.:28)	6	6.3333	3.2041	5	8.6000	3.2863	0.2778	N.S.
B. & G. READ. COMP. TEST								
Literal (max.: 4)	6	1.0000	1.0954	6	1.0000	0.6325	1.0000	N.S.
Inferential (max.: 8)	6	1.3333	0.8165	6	1.6666	1.5055	0.6438	N.S.
Evaluative (max.: 2)	6	1.5000	0.5477	6	0.5000	0.5477	0.0101	XX
TOTAL	6	3.8333	1.7224	6	3.1667	3.1370	0.5651	N.S.

TABLE 26

GRADE THREE STUDENTS WHO JOINED THE EXPERIMENTAL SCHOOL AS OF GRADE ONE

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE FRENCH ORAL LANGUAGE MEASURE

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
Gen. Comp. (0-5)	6	2.5000	1.7607	6	3.1667	1.6021	0.5083	N.S.
Lexical Q. (0-5)	6	1.5000	1.7607	6	2.3333	1.3663	0.3813	N.S.
Gramm. Q. (0-5)	6	1.1667	1.1690	6	1.6667	1.2111	0.4835	N.S.
Discurs.Q.(0-5)	6	1.3333	1.3663	6	1.3333	1.2111	1.0000	N.S.
Enunciat.Q. (0-5)	6	1.5000	1.6432	6	1.6667	1.5055	0.8583	N.S.
Pers. Exp. (0-3)	6	0.6667	0.5164	6	0.6667	0.5164	1.000	N.S.
No. of Fr. Words	6	71.5000	63.9304	6	91.0000	44.7571	0.5542	N.S.
No. of Engl. Words	6	52.1667	56.286[illegible]	6	29.3333	24.1551	0.3827	N.S.
TOTAL SCORE (0-28)	6	8.6667	7.814[illegible]	6	10.8333	6.6156	0.6155	N.S.

TABLE 27

GRADE THREE STUDENTS WHO JOINED THE EXPERIMENTAL SCHOOL AS OF GRADE TWO

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON TWO FRENCH READING COMPREHENSION TESTS

VARIABLE:	PRETEST N	PRETEST X	PRETEST S.D.	POSTTEST N	POSTTEST X	POSTTEST S.D.	PROB.	SIGNIF.
OISE FRENCH READING COMP.								
PART 1 (max.:16)	5	3.8000	1.3038	5	5.600	4.0988	0.3768	N.S.
PART 2 (max.:12)	5	3.0000	1.5811	5	3.0000	1.4142		N.S.
TOTAL (max.:28)	5	6.8000	1.4832	5	8.6000	4.9800	0.4609	N.S.
B. & G. READING COMP.								
Literal (max.: 4)	5	0.8000	0.8367	5	1.0000	0.7071	0.6938	N.S.
Inferential(max.: 8)	5	0.8000	1.3038	5	3.2000	1.0954	0.0136	X
Evaluative(max.: 2)	5	1.2000	0.4472	5	0.8000	0.8367	0.3734	N.S.
TOTAL	5	2.8000	1.4832	5	5.0000	2.4495	0.1241	N.S.

TABLE 28

GRADE THREE STUDENTS WHO JOINED THE EXPERIMENTAL SCHOOL AS OF GRADE TWO

RESULTS OF t-TESTS ON PRETEST-POSTTEST DIFFERENCES ON THE FRENCH ORAL LANGUAGE MEASURE

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
Gen. Comp. (0-5)	5	4.0000	1.4142	4	4.2500	1.5000	0.8048	N.S.
Lexical Q. (0-5)	5	3.4000	1.5166	4	3.0000	1.6330	0.7149	N.S.
Gramm. Q. (0-5)	5	3.0000	1.2248	4	2.7500	1.2583	0.7724	N.S.
Discurs. Q. (0-5)	5	3.2000	1.9235	4	3.0000	2.1602	0.8873	N.S.
Enunc. Q. (0-5)	5	3.2000	1.9235	4	3.5000	1.7321	0.8153	N.S.
Pers. Exp. (0-3)	5	1.8000	1.3038	4	1.5000	1.2910	0.7406	N.S.
No. of Fr. Words	5	195.8000	100.4624	4	173.7500	99.8010	0.7524	N.S.
No. of Engl. Words	5	23.2000	32.3990	4	14.0000	22.8765	0.6474	N.S.
TOTAL SCORE (0-28)	5	18.6000	8.8769	4	18.0000	9.2736	0.9240	N.S.

TABLE 29

GRADE THREE STUDENTS WHO JOINED THE EXPERIMENTAL SCHOOL AS OF GRADE ONE OR TWO

t-TEST RESULTS ON PRETEST-POSTTEST DIFFERENCES ON THREE FRENCH TESTS

VARIABLE:	PRETEST N	PRETEST $\bar{X}$	PRETEST S.D.	POSTTEST N	POSTTEST $\bar{X}$	POSTTEST S.D.	PROB.	SIGNIF.
OISE FR. READ. COMP.								
PART 1 (max.:16)	11	3.5455	1.6348	10	5.4000	3.3066	0.1146	N.S.
PART 2 (max.:12)	11	3.0000	1.7888	10	3.2000	1.1353	0.7658	N.S.
TOTAL (max.:28)	11	6.5455	2.4643	10	8.6000	3.9778	0.1667	N.S.
B. & G. FR. READ. COMP.								
Literal(max.: 4)	11	0.9091	0.9439	10	1.0000	0.6325	0.7934	N.S.
Inferential(max.:8)	11	1.0909	1.0445	10	2.3636	1.5015	0.0318	X
Evaluative(max.: 2)	11	1.3636	0.5045	10	0.6364	0.6742	0.0096	XX
TOTAL (max.:14)	11	3.3636	1.6293	10	4.000	2.3664	0.4711	N.S.
FR. ORAL. LANG. MEASURE								
Gen. Comp. (0-5)	11	3.1818	1.7215	10	3.6000	1.5776	0.5698	N.S.
Lexical Q. (0-5)	11	2.3636	1.8586	10	2.6000	1.4298	0.7494	N.S.
Gramm. Q. (0-5)	11	2.0000	1.4832	10	2.1000	1.2867	0.8713	N.S.
Discurs. Q.(0-5)	11	2.1818	1.8340	10	2.0000	1.7638	0.8198	N.S.
Enunc. Q. (0-5)	11	2.2727	1.9021	10	2.4000	1.7764	0.8761	N.S.
Pers. Exp. (0-3)	11	1.1818	1.0787	10	1.0000	0.9428	0.6869	N.S.
No. of Fr. Words	11	128.0000	101.4613	10	124.1000	79.1138	0.9234	N.S.
No. of Engl. Words	11	39.0000	47.2525	10	23.2000	23.6915	0.3528	N.S.
TOTAL (0-28)	11	13.1818	9.4320	10	13.7000	8.1656	0.8949	N.S.

TABLE 30

GRADE THREE

ANALYSIS OF VARIANCE BY SEX ON THE OISE FRENCH READING COMPREHENSION PRETEST & POSTTEST SCORES

VARIABLE:	GROUP: MALES (N=16) $\bar{X}$	FEMALES (N=20) $\bar{X}$	PROB.	SIGNIF.
PRETEST				
PART ONE (max.:16)	5.0000	5.1000	0.9363	N.S.
PART TWO (max.:12)	4.3750	3.7500	0.4996	N.S.
TOTAL (max.:28)	9.3750	8.8500	0.8014	N.S.
No. of Omitted Quest.	0.0625	1.2000	0.3837	N.S.
% Correct Answers	33.6250	31.6000	0.7858	N.S.
POSTTEST				
PART ONE (max.:16)	5.9333	7.2632	0.3577	N.S.
PART TWO (max.:12)	3.9333	4.3158	0.6736	N.S.
TOTAL (max.:28)	9.8667	11.5789	0.4425	N.S.
No. of Omitted Quest.	0.0667	0.0526	0.8679	N.S.
% Correct Answers	35.2667	41.4737	0.4351	N.S.

TABLE 31

GRADE THREE

ANALYSIS OF VARIANCE BY SEX ON THE B. & G. FRENCH READING PRETEST & POSTTEST SCORES

VARIABLE:	GROUP: MALES (N=16) $\bar{X}$	FEMALES (N=20) $\bar{X}$	PROB.	SIGNIF.
PRETEST				
Literal Comp. (max.: 4)	1.5625	1.5000	0.883	N.S.
Inferential Comp. (max.: 8)	2.0000	2.1000	0.8680	N.S.
Evaluative Comp. (max.: 2)	1.1875	1.3500	0.4706	N.S.
TOTAL (max.:14)	4.7500	4.9500	0.8360	N.S.
POSTTEST				
Literal Comp. (max.: 4)	1.8667	1.5500	0.4683	N.S.
Inferential Comp. (max.: 8)	2.8667	2.9500	0.8939	N.S.
Evaluative Comp. (max.: 2)	1.0667	1.0500	0.9503	N.S.
TOTAL (max.:14)	5.8000	5.5500	0.8277	N.S.

TABLE 32

GRADE THREE

ANALYSIS OF VARIANCE BY SEX ON THE FRENCH ORAL LANGUAGE MEASURE PRETEST & POSTTEST SCORES

VARIABLE:	GROUP: MALES (N=16) $\overline{X}$	FEMALES (N=20) $\overline{X}$	PROB.	SIGNIF.
PRETEST				
Gen. Comp. (0-5)	3.3750	3.3500	0.9678	N.S.
Lexical Qual. (0-5)	2.3750	2.3500	0.9669	N.S.
Gramm. Qual. (0-5)	2.3750	1.8000	0.3122	N.S.
Discursive Qual. (0-5)	1.9375	1.9000	0.9514	N.S.
Enunc. Qual. (0-5)	2.1250	2.1000	0.9680	N.S.
Pers. Exp. (0-3)	0.9375	1.0000	0.8552	N.S.
No. of Fr. Words	120.5625	146.2000	0.4205	N.S.
No. of Engl. Words	44.2500	41.1500	0.8466	N.S.
TOTAL SCORE (0-28)	13.1250	12.5000	0.8448	N.S.
POSTTEST				
Gen. Comp. (0-5)	3.6250	3.9474	0.5476	N.S.
Lexical Qual. (0-5)	2.7500	2.8947	0.7787	N.S.
Gramm. Qual. (0-5)	2.4375	2.2631	0.7460	N.S.
Discursive Qual. (0-5)	1.8750	2.1579	0.6287	N.S.
Enunc. Qual. (0-5)	2.4375	2.7895	0.5495	N.S.
Pers. Exp. (0-3)	1.0000	1.1579	0.6521	N.S.
No. of Fr. Words	128.6250	173.2632	0.1326	N.S.
No. of Engl. Words	29.3125	27.5789	0.8816	N.S.
TOTAL SCORE (0-28)	14.1250	15.2105	0.7127	N.S.

TABLE 33

GRADE THREE

ANALYSIS OF VARIANCE, BY SEX, ON THE METROPOLITAN ACHIEVEMENT TEST SCORES

VARIABLE:	GROUP: MALES (N=16) $\overline{X}$	FEMALES (N=20) $\overline{X}$	PROB.	SIGNIF.
Vocabulary (max.: 5)	2.6250	2.1000	0.2451	N.S.
Literal (max.:40)	23.9375	23.7000	0.9415	N.S.
Inferential (max.:12)	5.5625	5.9500	0.7039	N.S.
Evaluative (max.: 3)	1.5625	1.6000	0.9100	N.S.
TOTAL (max.:60)	13.1250	12.5000	0.9427	N S.

TABLE 34

GRADE FOUR

ANOVA ON THE OISE FRENCH READING COMPREHENSION TEST SCORES

GROUP: / VARIABLE:	St. Joseph School N	St. Joseph School $\bar{X}$	Comparison Group 1 N	Comparison Group 1 $\bar{X}$	Comparison Group 2 N	Comparison Group 2 $\bar{X}$	PROB.	SIGNIF.
TOTAL SCORE (max.:34)	20	14.450	22	13.091	23	12.043	0.4589	N.S.
No. of Blanks	20	0.0000	22	1.1364	23	6.1739	0.0001	C2>C1,S.J.
% Correct Answers	20	42.500	22	40.136	23	43.870	0.7985	N.S.
Part 1 (max.:18)	20	8.4500	22	7.0455	23	7.0435	0.3698	N.S.
Part 2 (max.:16)	20	6.000	22	6.0455	23	5.0000	0.5313	N.S.

TABLE 35

GRADE FOUR

ANOVA ON THE ATTITUDE QUESTIONNAIRE SCORES

VARIABLE:	GROUP:	St. Joseph School N	St. Joseph School $\bar{X}$	Comparison Group 1 N	Comparison Group 1 $\bar{X}$	Comparison Group 2 N	Comparison Group 2 $\bar{X}$	PROB.	SIGNIF.
TOTAL SCORE	(max.:54)	20	23.300	22	32.318	23	30.957	.0122	C1,C2 > S.J.
PART 1	(max.:14)	20	7.4000	22	9.5455	23	8.7826	.0448	C1 > S.J.
PART 2	(max.:40)	20	15.900	22	22.727	23	22.174	.0132	C1,C2 > S.J.

TABLE 36

GRADE FOUR MALE STUDENTS

ANOVA ON THE OISE FRENCH READING COMPREHENSION TEST SCORES

VARIABLE: / GROUP:	St. Joseph School N	St. Joseph School $\bar{X}$	Comparison Group 1 N	Comparison Group 1 $\bar{X}$	Comparison Group 2 N	Comparison Group 2 $\bar{X}$	PROB.	SIGNIF.
TOTAL SCORE (max.:34)	11	12.727	12	11.750	13	13.615	0.7792	N.S.
No. of Blanks	11	0.0000	12	1.7500	13	4.5385	0.0788	C2>S.J.
% Correct Answers	11	37.455	12	37.250	13	46.308	0.4405	N.S.
PART 1 (max.:18)	11	7.7273	12	6.7500	13	7.6154	0.8127	N.S.
PART 2 (max.:16)	11	5.0000	12	5.0000	13	6.0000	0.6751	N.S.

TABLE 37

GRADE FOUR MALE STUDENTS

ANOVA ON THE ATTITUDE QUESTIONNAIRE SCORES

VARIABLE:	GROUP:	St. Joseph School N	St. Joseph School X̄	Comparison Group 1 N	Comparison Group 1 X̄	Comparison Group 2 N	Comparison Group 2 X̄	PROB.	SIGNIF.
TOTAL SCORE	(max.:54)	11	19.909	12	29.167	13	30.923	0.0328	C2,C1>SJ
PART 1	(max.:14)	11	8.0909	12	9.1667	13	9.4615	0.0061	C2,C1>SJ
PART 2	(max.:40)	11	13.818	12	19.917	13	21.462	0.0985	C2>SJ

TABLE 38

GRADE FOUR FEMALE STUDENTS

ANOVA ON THE OISE FRENCH READING COMPREHENSION TEST SCORES

VARIABLE: / GROUP:	St. Joseph School N	St. Joseph School X	Comparison Group 1 N	Comparison Group 1 X	Comparison Group 2 N	Comparison Group 2 X	PROB.	SIGNIF.
TOTAL SCORE (max.:34)	9	16.556	10	14.700	10	10.000	0.0451	SJ C2
No. of Blanks	9	0.000	10	0.4000	10	8.3000	0.0005	C2 C1,SJ
% Correct Answers	9	48.667	10	43.600	10	40.700	0.6063	N.S.
PART 1 (max.:18)	9	9.3333	10	7.4000	10	6.3000	0.1447	N.S.
PART 2 (max.:16)	9	7.2222	10	7.3000	10	3.7000	0.0528	C1,SJ > C2

TABLE 39

GRADE FOUR FEMALE STUDENTS

ANOVA ON THE ATTITUDE QUESTIONNAIRE SCORES

VARIABLE:	GROUP:	St. Joseph School N	St. Joseph School $\bar{X}$	Comparison Group 1 N	Comparison Group 1 $\bar{X}$	Comparison Group 2 N	Comparison Group 2 $\bar{X}$	PROB.	SIGNIF.
TOTAL SCORE	(max.:54)	9	27.444	10	36.100	10	31.000	0.1561	N.S.
PART 1	(max.:14)	9	9.0000	10	10.0000	10	7.9000	0.4124	N.S.
PART 2	(max.:40)	9	18.444	10	26.100	10	23.100	0.0577	C1>SJ

TABLE 40

BREAKDOWN OF PUPIL VERBAL EVENTS IN GRADE FOUR BY LANGUAGE USED DURING CLASS (ENGLISH, FRENCH) AND BY SEX (BOY, GIRL)

VERBAL EVENTS 175			
In English 31		In French 144	
Boys 12	Girls 19	Boys 52	Girls 92

TABLE 41

BREAKDOWN OF PUPIL VERBAL EXCHANGES IN GRADE FOUR WITH TEACHER AND WITH STUDENTS BY TYPE OF VERBAL INTERACTION (RESPONDING OR INITIATING CONVERSATION), IN EACH LANGUAGE (ENGLISH, FRENCH) AND BY SEX (BOYS, GIRLS)

VERBAL EXCHANGES 175															
With Teacher 148								With Students 27							
Reaction 122				Initiation 26				Reaction 0				Initiation 27			
English 5		French 117		English 13		French 13		English 0		French 0		English 13		French 14	
B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
2	3	45	72	5	8	3	10	0	0	0	0	5	8	4	10

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APPENDIX A

STUDENT QUESTIONNAIRE*

NAME: _____ CIRCLE: BOY GIRL

SCHOOL: _____ GRADE: _____

This questionnaire asks you to tell us your ideas about learning French. Please answer all the questions. Ask the teacher for help if you cannot read some of the words. Circle the answer you want. Thank you!

PART I

1. I always feel that other students speak French better than I do.

   yes no

2. Learning French is more difficult than learning Geography.

   yes no

3. I wish that I could speak several other languages.

   yes no

4. I am afraid that the other students will laugh at me when I speak French.

   yes no

5. I look forward to the French period everyday.

   yes no

6. I like to meet and listen to people who speak other languages.

   yes no

7. I am shy to speak in our French class.

   yes no

*NOT FOR REPRODUCTION

APPENDIX A (Continued)

8. I really enjoy learning French more than any other subject.

yes no

9. I get nervous and confused when I am speaking in French class.

yes no

10. Learning French is just as important as learning Mathematics.

yes no

11. I enjoy learning French as much as any other subject.

yes no

12. I would like to have more school time for French.

yes no

13. Learning French is harder than learning Mathematics.

yes no

14. I would rather miss another class than miss my French class.

yes no

PART II

For each question, circle the one answer that is closest to the way you think.

1. If I had the chance to speak French outside of school, I would

(a) speak French most of the time

(b) speak it once in a while, using English whenever possible

(c) never speak it

APPENDIX A (Continued)

2. If we did not have French in school, I would

   (a) try to get lessons in French somewhere else

   (b) not bother learning French at all

   (c) pick up French by playing with my friends

3. During French class, I would like

   (a) to have only French spoken

   (b) to have as much English as possible spoken

   (c) to have both English and French spoken

4. When I have a problem understanding something we are learning in French class, I

   (a) try to get one of my friends to help me

   (b) ask the teacher right away for help

   (c) just forget it

5. If it were up to me whether or not to take French, I

   (a) would drop it

   (b) would definitely take it

   (c) don't know whether I would take it or not

6. When I go to the library or a bookstore, I

   (a) never choose a French book

   (b) sometimes choose a French book

   (c) usually choose a French book

7. When I am in French class, I

   (a) never say anything

   (b) answer as much as possible

   (c) answer only the easy questions

APPENDIX A (Continued)

8. When I do my French homework, I

(a) work very carefully, making sure I understand everything

(b) put some effort into it, but not as much as I could

(c) just skim over it

9. If my teacher wanted someone to do a special French project, I would

(a) only do it if the teacher asked me

(b) definitely volunteer

(c) definitely not volunteer

10. When I have the chance to meet French-speaking people, for example, in a store, I

(a) speak French with them as much as possible

(b) never speak French with them

(c) speak French with them sometimes

11. When I hear a French song on the radio, I

(a) listen carefully and try to understand all the words

(b) listen to the music, paying attention only to the easy words

(c) change the station

12. I find studying French

(a) very interesting

(b) not interesting at all

(c) no more interesting than most subjects

13. If I had the choice between French or English summer camp, I would

(a) choose the French camp

(b) choose the English camp

(c) choose either camp - the language spoken doesn't matter

APPENDIX A (Continued)

14. I watch French T.V. at home
    (a) sometimes
    (b) as often as possible
    (c) never

15. I read French comic books
    (a) sometimes
    (b) as often as possible
    (c) never

16. I go to French movies
    (a) sometimes
    (b) as often as possible
    (c) never

17. I read French storybooks at home
    (a) sometimes
    (b) as often as possible
    (c) never

18. I speak to my parents in French
    (a) sometimes
    (b) as often as possible
    (c) never

19. I speak to my brothers, sisters and other relatives in French
    (a) sometimes
    (b) as often as possible
    (c) never

20. I speak to my friends in French
    (a) sometimes
    (b) as often as possible
    (c) never

APPENDIX B

ATTITUDE QUESTIONNAIRE

RESULTS OF CHI SQUARE FOR GRADE 4 FOLLOW-UP STUDENTS IN ST. CROIX BOARD (A) AND IN A COMPARISON BOARD (B)

	NO (%)	YES (%)	PROB.
QUESTION #1			
BOARD A	51	49	.9073
BOARD B	50	50	
QUESTION #2			
BOARD A	25	75	.3407
BOARD B	35	65	
QUESTION #3			
BOARD A	15	85	.9742
BOARD B	15	85	
QUESTION #4			
BOARD A	22	78	.4601
BOARD B	15	85	
QUESTION #5			
BOARD A	21	79	.0009
BOARD B	55	45	
QUESTION #6			
BOARD A	13	87	.0001
BOARD B	50	50	
QUESTION #7			
BOARD A	19	81	.8936
BOARD B	20	80	
QUESTION #8			
BOARD A	60	40	.0084
BOARD B	90	10	
QUESTION #9			
BOARD A	35	65	.6765
BOARD B	30	70	
QUESTION #10			
BOARD A	14	86	.0171
BOARD B	35	65	

APPENDIX B (Continued)

	NO (%)	YES (%)	PROB.
QUESTION #11			
BOARD A	31	69	.0001
BOARD B	80	20	
QUESTION #12			
BOARD A	60	40	.0895
BOARD B	80	20	
QUESTION #13			
BOARD A	31	69	.9099
BOARD B	30	70	
QUESTION #14			
BOARD A	45	55	.0123
BOARD B	75	25	

	A (%)	B (%)	C (%)	PROB.
QUESTION #15				
BOARD A	7	62	31	.0004
BOARD B	30	70	0	
QUESTION #16				
BOARD A	10	43	47	.0014
BOARD B	30	50	20	
QUESTION #17				
BOARD A	4	30	66	.0316
BOARD B	15	45	40	
QUESTION #18				
BOARD A	6	26	68	.6510
BOARD B	10	20	70	
QUESTION #19				
BOARD A	5	36	59	.1623
BOARD B	15	40	45	
QUESTION #20				
BOARD A	26	63	11	.0003
BOARD B	70	30	0	

A = LEAST FAVOURABLE ATTITUDE; C = MOST FAVOURABLE ATTITUDE.

APPENDIX B (Continued)

	A (%)	B (%)	C (%)	PROB.
QUESTION #21				
BOARD A	4	14	82	.0001
BOARD B	30	15	55	
QUESTION #22				
BOARD A	5	15	81	.1247
BOARD B	15	5	80	
QUESTION #23				
BOARD A	8	44	48	.0048
BOARD B	25	60	15	
QUESTION #24				
BOARD A	13	26	60	.1023
BOARD B	20	5	75	
QUESTION #25				
BOARD A	28	10	62	.0001
BOARD B	75	10	15	
QUESTION #26				
BOARD A	10	32	58	.0020
BOARD B	30	50	20	
QUESTION #27				
BOARD A	47	37	17	.3254
BOARD B	60	35	5	
QUESTION #28				
BOARD A	16	69	15	.0073
BOARD B	45	50	5	
QUESTION #29				
BOARD A	24	61	15	.0001
BOARD B	85	10	5	
QUESTION #30				
BOARD A	49	40	11	.0359
BOARD B	80	15	5	
QUESTION #31				
BOARD A	28	56	15	.0480
BOARD B	55	40	5	
QUESTION #32				
BOARD A	24	56	19	.0514
BOARD B	50	40	10	

A = LEAST FAVOURABLE ATTITUDE; C = MOST FAVOURABLE ATTITUDE.

APPENDIX B (Continued)

	A (%)	B (%)	C (%)	PROB.
QUESTION #33				
BOARD A	35	47	19	.0662
BOARD B	60	35	5	
QUESTION #34				
BOARD A	15	64	21	.0001
BOARD B	80	15	5	

A = LEAST FAVOURABLE ATTITUDE; C = MOST FAVOURABLE ATTITUDE.